We claim:

1. A method for performing pulse width modulated (PWM) signal duty cycle calculations in a fan speed control system operating to control rotational speed of at least one fan, the method comprising:

5   obtaining a temperature reading from a first temperature sensor in the fan speed control system during a first time period, the temperature reading having resolution of a first number of bits;

selecting a portion of the first number of bits for calculating a PWM signal duty cycle;

10   calculating a PWM signal duty cycle with the resolution of the first number of bits in the temperature reading using only the portion of the first number of bits and zone parameters associated with the first temperature sensor;

converting the PWM signal duty cycle into a PWM signal;

providing the PWM signal having the calculated PWM signal duty cycle to the at

15   least one fan.

2. The method of claim 1 wherein said selecting the portion of the first number of bits comprises selecting eight bits, wherein the eight bits offer one degree temperature resolution.

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3. The method of claim 1 wherein said selecting the portion of the first number of bits comprises selecting eight bits, wherein the eight bits offer one half degree temperature resolution.

25   4. The method of claim 1 wherein said selecting the portion of the first number of bits comprises selecting eight bits, wherein the eight bits offer one fourth degree temperature resolution.

5. The method of claim 1 wherein said selecting the portion of the first number of bits comprises programmably selecting eight bits, wherein the eight bits are selected according to the zone parameters of the fan speed control system.

6. The method of claim 1 wherein the fan speed control system is an autofan block.

7. The method of claim 1 further comprising computing a desired PWM signal duty cycle according to the first number of bits and the zone parameters associated with the first temperature sensor.

8. The method of claim 7 further comprising comparing the desired PWM signal duty cycle to a predetermined minimum PWM duty cycle to determine if the PWM signal duty cycle should be calculated.

9. The method of claim 8 further comprising comparing the desired PWM signal duty cycle to a predetermined maximum PWM duty cycle to determine if the PWM signal should be calculated.

10. The method of claim 1 wherein said zone parameters include a zone limit, a zone range, a PWM minimum, a PWM maximum, a resolution parameter, and a current temperature.

11. A fan control system comprising:

at least one temperature sensor operable to obtain a temperature reading having a resolution of a first number of bits, each temperature sensor having related sensor parameters;

a PWM (pulse width modulated) signal generator operable to generate a PWM signal duty cycle according to a portion of the first number of bits;

wherein the PWM signal duty cycle is generated with a temperature resolution of the first number of bits using only the portion of the first number of bits.

12.   The fan control system of claim 11 wherein the first number of bits comprise 10 bits and the sensor parameters are configured to allow 10 bit resolution of the temperature sensor readings with the portion of the first number of bits.

13.   The fan control system of claim 11 wherein the portion of the first number of bits comprise 8 bits of temperature information, wherein the PWM signal generator is operable to calculate PWM signals at ¼ degree resolution from 8-bits of temperature information.

14.   The fan control system of claim 11 wherein the PWM signal generator is operable to generate a PWM signal having a duty cycle corresponding to the PWM signal duty cycle calculated according to the portion of the first number of bits.

15.   The fan control system of claim 14 wherein the duty cycle of the PWM signal changes with ½ degree changes in temperature.

16.   The fan control system of claim 14 wherein the duty cycle of the PWM signal changes with ¼ degree changes in temperature.

17.   A method for operating a fan control block to control rotational speed of at least one fan, the method comprising:

receiving a first temperature reading from a first temperature sensor during a first time period;

recording the first temperature reading as a 10 bit digital value;

calculating a pulse width modulated (PWM) signal duty cycle according to only a portion of the 10 bit digital value and according to sensor parameters associated with the first temperature sensor, wherein the PWM signal duty cycle is calculated with 10 bit resolution; and

providing a PWM signal having the calculated PWM signal duty cycle to the at least one fan.

18.   The method of claim 17 further comprising selecting eight of the ten bits for the calculating of the PWM signal duty cycle at a 10-bit resolution level.

5   19.   The method of claim 17 wherein a PWM signal is calculated from a first temperature reading that is recorded within one degree accuracy of the first temperature reading.

20.   The method of claim 17 wherein a PWM signal is calculated from a first

10   temperature reading that is recorded within one half degree accuracy of the first temperature reading.

21.   The method of claim 17 wherein a PWM signal is calculated from a first temperature reading that is recorded within one fourth of a degree accuracy of the first

15   temperature reading.